

REMARKS

Applicants appreciate the thoroughness with which the Examiner has examined the above-identified application. Reconsideration is requested in view of the amendments above and the remarks below.

Specification objections

Applicants have amended the title as requested by the Examiner.

Claim election

Applicants have cancelled non-elected claims 2-23 and 25 as requested by the Examiner

Rejection under 35 USC § 112, first paragraph

Rejections under 35 USC § 112, first paragraph, for non-enablement have been made to claims 1, 2 and 4-14 with respect to the term "surface" and to claims 1, 2, 15 and 24 with respect to the phrase "without substantially sliding ...". Applicants respectfully traverse these rejections.

Claim 1 has been amended to claim the embodiment disclosed in Fig. 2, wherein the "surface" is on the roller. Support is found in original claim 10, and in the specification at paragraph 0037, lines 3-4, wherein it is stated, "surface 32 may be adhered or bonded to, or otherwise formed on, the surface of roller 20, and the paste may be applied directly thereto." Claim 10 has been cancelled. No new matter has been added.

The remaining independent claims 2, 15 and 24 have been amended to claim the embodiment wherein the "surface" is a separate film strip, which is recited in

originally filed claim 3 and throughout the specification and drawings. Claim 3 has been cancelled. No new matter has been added.

Applicants believe that the phrase "without substantially sliding ..." is properly enabled by the specification and drawings. However, applicants have deleted the phrase since it is not necessary to distinguish the invention over the prior art.

Applicants believe that the rejections under 35 USC § 112, first paragraph are now obviated.

Rejection under 35 USC § 112, second paragraph

Claims 1 and 2 stand rejected under 35 USC 112, second paragraph, for being indefinite with respect to the term "surface." Applicants respectfully traverse this rejection.

Claims 1 and 2 have been amended as stated above to specify the location of the "surface." As such, applicants believe that the rejection under 35 USC § 112, second paragraph is now obviated.

Rejection under 35 USC § 103

Claims 1-18 and 24 stand rejected under 35 USC § 103 as being obvious from JP 02-177496 in view of IBM Technical Disclosure Bulletin, April 1974, Vol. 16, No. 11, p.3564 "Roll Extrusion Filling of Small Vias." Claims 10 and 19 stand rejected under 35 USC § 103 as being obvious from JP 02-177496 in view of the IBM Technical Disclosure Bulletin and further in view of Casey et al. U.S. Patent Publication No. 2002/009539. Applicants respectfully traverse these rejections.

Claim 1

Claim 1 as amended now recites that the paste is applied directly to the side of the roller surface facing the mask, followed by rolling the roller surface over the mask

and flowing the paste into the openings in the mask. Support is discussed above, and no new matter has been added. The JP 02-177496 reference shows the roller rolling the solder paste already on the surface of the printed circuit board. Likewise, the IBM Technical Disclosure Bulletin discloses the application of the paste on the mask over the green ceramic sheet prior to the placement of the top Mylar sheet. Thus, the cited references separately or in combination do not disclose or suggest applicants' method as recited in claim 1.

Claims 2 and 4-9

Claim 2 has been amended to recite that the "surface" is on a film strip, separate from the roller, disposed between the roller and the substrate, and that the paste is applied to a portion of side of the surface facing the mask, prior to the paste contacting the mask. Support is found in original claims 3 and 8, in the drawings in Figs. 1, 6 and 8, and in the specification at paragraphs 0036, 0039, 0041 and 0042. No new matter has been added.

As described earlier, the JP 02-177496 reference shows the roller rolling the solder paste already on the surface of the printed circuit board, and the IBM Technical Disclosure Bulletin discloses the application of the paste on the mask over the green ceramic sheet prior to the placement of the top Mylar sheet.

Casey et al. U.S. Patent Publication No. 2002/009539 discloses the use of a "blotter 24 on roller 32 [] caused to move over the surface o the mask 14 (after screening of the low viscosity paste) in the direction of arrow 30 to blot up the excess solvent in the low viscosity paste." Casey et al., paragraph 0040, lines 3-6. Casey et al. does not disclose applying the paste to blotter 24.

Additionally, the cited references do not disclose the following methods of applying the paste to the film strip as recited in claims dependent on claim 2:

- the paste is applied in a bead across the surface, parallel to the roller axis (claim 4);
- the paste is applied in a continuous bead across the surface, parallel to the roller axis (claim 5);
- the paste is applied in a discontinuous bead across the surface, parallel to the roller axis (claim 6);
- the paste is applied in a bead across the surface, parallel to the roller axis, at a variable rate of speed (claim 7);
- the paste is applied in a film on the surface (claim 8);
- the paste is applied selectively to the surface, conforming to areas of the mask openings (claim 9);

While the Examiner has dismissed these methods as being "within the skill of one practicing in the art" (Office action, p.5), applicants submit that this is simply not the case and respectfully request that the Examiner provide either examples by way of prior art or an affidavit to that effect.

Since the cited references separately or in combination do not disclose or suggest applicants' aforementioned methods of applying the paste to the film strip, applicants' claims 2 and 4-9 are not obvious to one of ordinary skill in the art.

Claims 15-19

Claim 15 has been amended to recite that the paste is applied onto a side of the film facing the mask, parallel to the roller axis. Support is found in originally filed

dependent claims 16-18, in the drawings at Fig. 7, and in the specification at paragraphs 0010 and 0039. No new matter has been added.

Neither the JP 02-177496 reference, the IBM Technical Disclosure Bulletin, nor Casey et al. discloses applying paste onto a side of a film facing a mask, parallel to the roller axis. Likewise, the references do not disclose the following features of the claims dependent on claim 15: a) the paste is applied in a continuous bead across the surface, parallel to the roller axis (claim 16); b) the paste is applied in a discontinuous bead across the surface, parallel to the roller axis (claim 17); and c) the paste is applied in a bead across the surface, parallel to the roller axis, at a variable rate of speed (claim 18). Accordingly, claims 15-19 would not be obvious to one of ordinary skill in the art from the cited references.

Claim 24

Claim 24 recites that the film strip provided has on a surface thereof a layer of paste to be applied to the substrate. Neither the JP 02-177496 reference, the IBM Technical Disclosure Bulletin, nor Casey et al. discloses this feature of the film strip. Accordingly, claim 24 would not be obvious to one of ordinary skill in the art from the cited references.

Applicants have amended claims 1, 2, 15 and 24 and have cancelled claims 3, 10, 20-23 and 25 from further consideration in this application. Applicants are not conceding in this application that the claims as they stood prior to amendment are not patentable over the art cited by the Examiner, as the present claim amendments and cancellations are only for facilitating expeditious prosecution and allowance of the claims. Applicants respectfully reserve the right to pursue these prior and other claims in one or more continuation and/or divisional patent applications.

It is respectfully submitted that the application has now been brought into a condition where allowance of the entire case is proper. Reconsideration and issuance of a notice of allowance are respectfully solicited.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Thomas E. Ciesco", written over a horizontal line.

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